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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,773	02/26/2002	Robert Bruce Ganton	UTL 00080	1999

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Kyocera Wireless Corp.
Attn: Patent Department
PO Box 928289
San Diego, CA 92192-8289

EXAMINER

PATEL, HETUL B

ART UNIT	PAPER NUMBER
2186	2

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

52

Office Action Summary

Application No.

10/085,773

Applicant(s)

GANTON, ROBERT BRUCE

Examiner

Hetul Patel

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Claims 1-43 are presented for examination.
2. The disclosure is objected to because of the following informalities:
Throughout the whole disclosure and claims, it should be stated as "... wireless communication device ..." instead of "... wireless communications device ..." as disclosed in this application.
Appropriate correction is required.

Claim Objections

3. Claim 1 is objected to because of the following informalities:
Last paragraph of the claim 1 should state "...a second controller coupled to the addressable volatile memory and ..." instead of "...a second controller coupled to the volatile memory and ..." and "... data stored in the addressable volatile memory." Instead of "... data stored in the volatile addressable memory." As disclosed in this application to retain the term consistency throughout the whole application.
Appropriate correction is required.
4. Claims 2-3 are objected to because of the following informalities:
Claim 2 should state "... is clocked serial flash memory." instead of "... is clocked serial memory." as disclosed in this application.

Similarly, claim 3 should state "... is clocked parallel flash memory." instead of "... is clocked parallel memory." as disclosed in this application.

Appropriate correction is required.

5. Claims 9 is objected to because of the following informalities:

Claim 9 should state "... wherein the wireless communication device circuit is implemented with the volatile memory." or similar instead of "... wherein the volatile memory is the wireless communication device circuit." as disclosed in this application.

Appropriate correction is required.

6. Claims 40 is objected to because of the following informalities:

Claim 40 should state "... wherein the first controller with the logic, separates ..." or similar instead of "... wherein the first controller the logic separates ..." as disclosed in this application.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the first processor" in line 10 of page 16. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that format the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-39, 41-42 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Kwon (USPN: 2003/0050087).

As per claim 1, Kwon discloses a wireless communication device (the mobile phone 200 in Fig. 2A), comprising:

- indirectly-read memory that is not volatile (NAND-type flash memory 210 in Fig. 2A);
- data (main program and user data) stored in the indirectly-read memory (NAND-type flash memory);
- an addressable volatile memory (first and second RAM 230, 235 in Fig. 2A) coupled to the indirectly-read memory;

- a first controller (MPU 220 in Fig. 2A) coupled to the indirectly-read memory and the addressable volatile memory;
- logic (NAND interface circuit ASIC 215, in Fig. 2A) coupled to the first controller wherein the logic and the first controller are configured to transfer the data from the indirectly-read memory to the addressable volatile memory;
- a wireless communication device circuit (RAM2 235 in Fig. 2A);
- a second controller (microprocessor 220 in Fig. 2A) coupled to the volatile memory and the wireless communication device circuit and configured to control the wireless communication device circuit based upon the data stored in the volatile addressable memory (e.g. see paragraphs 24-26 on page 2).

As per claims 2, 3 and 10, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device, wherein the flash memory can be a NAND-type flash memory (which is referred as serial flash memory in the 'Background of the Invention' section of this application) or a NOR-type flash memory (which is referred as parallel flash memory in the 'Background of the Invention' section of this application) (e.g. see paragraph 26 on page 2). Accordingly, either the clocked parallel flash memory or the clocked serial flash memory can be used as the indirectly read memory, based on this rationale, claims 2, 3 and 10 are rejected.

As per claims 4 and 5, Kwon teaches the wireless communication device, which uses the NAND-type flash memory. The NAND-type flash memory is one of the non-volatile memory type being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-

volatile memories would yield different function of the system operation. Therefore, any type of non-volatile memories including the indexed addressable memory and the addressable, serially interfaced memory can be used in the place of NAND-type flash memory. Based on this rationale, claims 4 and 5 are rejected.

As per claim 6, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device, wherein the volatile memory (RAM1 and RAM2 230, 235 in Fig. 2A) is a Random Access Memory (RAM) (e.g. see lines 8-9 of paragraph 25); in addition, neither Applicant's specification nor the claimed invention disclose that different type of volatile memories would yield different function of the system operation. Therefore, any type of volatile memories including the dynamic random access memory (DRAM) and the static random access memory (SRAM), can be used. Kwon also teaches that the wireless communication device uses the NAND-type flash memory. The NAND-type flash memory (which is referred as serial memory in the 'Background of the Invention' section of this application) is one of the non-volatile memory being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-volatile memories would yield different function of the system operation. Therefore, any type of non-volatile memories including Multimedia Card, Smart Media Card, SD Card, and Memory Stick, can be used in place of the NAND-type flash memory.

As per claim 7, Kwon discloses the claimed invention as described above, and furthermore, Kwon discloses that the program stored in the indirectly-read memory (the NAND-type flash memory) gets copied into the volatile memory (the RAM1) to execute

that program by the RAM2 (e.g. see paragraph 25 on page 2). The volatile memory (RAM1 and RAM2) of the wireless communication device (the mobile phone) taught by Kwon is smaller in size compare to the indirectly-read memory (the NAND-type flash memory). Therefore, when the first controller (the MPU) requests the data stored in the indirectly-read memory, the device has to transfer only a portion of the data stored in the indirectly-read memory to the volatile memory due to the limited space and if the first controller requests the another data, which is currently not stored in the volatile memory, the memory interface will transfer that data to the volatile memory for further processing. Based on this rationale, the claim 7 get rejected.

As per claim 8, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device comprising: a read only memory (ROM of ASIC 215 in Fig. 2A) that contains boot code; and volatile memory (RAM1 230 in Fig. 2A), wherein when the wireless communication device is powered on (i.e. at the device reset time in step 300 of the flow chart shown in the Fig. 3), the boot code is executed (i.e. performs the initialization operation) and the first controller determines whether indirectly-read memory is connected to the wireless communication device (i.e. connection of the flash memory is checked by checking the contents of the flash memory in the step 304 of the flow diagram shown in the Fig. 3) and wherein if the indirectly-read memory is connected to the wireless communication device, the first controller with logic transfers data stored in the indirectly-read memory to the volatile memory (i.e. data gets transferred from the flash memory to the RAM in the step 312 of the flow diagram shown in the Fig. 3) (e.g. see paragraphs 33-35 on page 3) .

As per claim 9, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device, wherein the wireless communication device circuit (RAM2 235 in Fig. 2A) is implemented inside the volatile memory (e.g. see Fig. 2A and paragraph 25).

As per claims 11, 12 and 13, according to the Fig. 2A, the first controller, which is coupled to the flash memory and the RAM, and the second controller, which is coupled to the RAM and the wireless communication device circuit, are embedded in the MPU, taught by Kwon, since the flash memory, the RAM and the wireless communication device circuit are coupled to the MPU. The MPU is the main central processing unit (CPU) of the wireless communication device (the mobile phone). And it is very well known in the art that the central processing unit can also be referred as, either MPU, CPU, processor, microprocessor, the heart of the system, controller or microcontroller, based on this rationale, claims 11, 12 and 13 are rejected.

As per claims 14, 15, 16 and 17, according to the rejection of the claims 11-13, the first controller and the second controller are embedded in the MPU of the wireless communication device taught by Kwon. Thus the first controller and the second controller are a single MPU. The MPU is the main central processing unit (CPU) of the wireless communication device and it is very well known in the art that the central processing unit can also be referred as, either MPU, CPU, processor, microprocessor, the heart of the system, controller or microcontroller, based on this rationale, claims 14, 15, 16 and 17 are rejected.

As per claims 18-29, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device comprising the NAND-type flash memory which stores all application programs as well as other types of user data (e.g. see lines 3-7 of paragraph 25). Some of these application programs, for example, an operating system and calibration parameters, are critical to the operation of the wireless communication device; and some of these application programs, for example, interface information, a recent call list, display settings, roaming preferences, ringer preferences and a phone book, are not critical to the operation of the wireless communication device. Based on this rationale, claims 18-29 are rejected.

As per claim 30, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device comprises a power amplifier (power and reset 260 in the Fig. 2A).

As per claim 31, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device comprises a user interface (the user interface 250 in the Fig. 2A).

As per claim 32, Kwon teaches a method for managing a memory in a wireless communication device (the mobile phone 200 in Fig. 2A), comprising the steps of: sending a start signal to a clocked, non-addressable, non volatile memory (flash memory) from a controller (MPU); transferring data to a volatile, addressable memory (RAM); reading the data from the volatile addressable memory (RAM); controlling a wireless communication device circuit responsive to the data (e.g. see paragraph 34 on page 3 and Fig. 3).

As per claim 33, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing a memory in the wireless communication device, wherein the volatile memory (RAM1 and RAM2 230, 235 in Fig. 2A) is a Random Access Memory (RAM) (e.g. see lines 8-9 of paragraph 25); in addition, neither Applicant's specification nor the claimed invention disclose that different type of volatile memories would yield different function of the system operation. Therefore, any type of volatile memories including the dynamic random access memory (DRAM) and the static random access memory (SRAM), can be used.

As per claim 34, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing a memory in the wireless communication device, wherein the NAND-type flash memory (which is referred as serial memory in the 'Background of the Invention' section of this application) is one of the non-volatile memory being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-volatile memories would yield different function of the system operation. Therefore, any type of non-volatile memories including Multimedia Card, Smart Media Card, SD Card, and Memory Stick, can be used in place of the NAND-type flash memory.

As per claim 35, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing the memory in the wireless communication device comprising the step of determining whether the serial memory is connected to the portable radio telephone (i.e. the mobile phone initializes the RAM1 by clearing and assigning a code address to it in the step 310 of the flow diagram shown in

the Fig 3. This step will give error to the device if the RAM1 is not connected to the mobile phone) and wherein only if the serial memory is connected to the portable radio telephone then transferring data stored in the serial memory to the volatile memory (i.e. the program code gets transferred into the RAM1 in the step 312 of the flow diagram shown in the Fig 3 after the initialization step 310. The step 312 will not get executed without the successful execution of the step 310, thus the program code data gets transferred to the RAM1 only if the RAM1 is connected to the mobile phone).

As per claim 36, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing the memory in the wireless communication device, wherein the volatile memory (RAM1 and RAM2 230, 235 in Fig. 2A) is a Random Access Memory (RAM) (e.g. see lines 8-9 of paragraph 25). Since Kwon does not specifically disclose that what kind of RAM get used in the wireless communication device (the mobile phone), any kind of RAM, such as the dynamic random access memory (DRAM) or the static random access memory (SRAM), can be used as the volatile memory.

As per claim 37, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing a memory in the wireless communication device, wherein the NAND-type flash memory (which is referred as serial memory in the 'Background of the Invention' section of this application) is one of the non-volatile memory being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-volatile memories would yield different function of the system operation. Therefore, any

type of non-volatile memories including Multimedia Card, Smart Media Card, SD Card, and Memory Stick, can be used in place of the NAND-type flash memory.

As per claim 38, Kwon discloses the claimed invention as described above, and furthermore, Kwon discloses that the program stored in the serial memory (the NAND-type flash memory) gets copied into the volatile memory (the RAM1) to execute that program by the RAM2 (e.g. see paragraph 25 on page 2). The volatile memory (RAM1 and RAM2) of the wireless communication device (the mobile phone) taught by Kwon is smaller in size compare to the indirectly-read memory (the NAND-type flash memory). Therefore, when the first controller (the MPU) requests the data stored in the indirectly-read memory, the device has to transfer only a portion of the data stored in the indirectly-read memory to the volatile memory due to the limited space and if the first controller requests the another data, which is currently not stored in the volatile memory, the memory interface will transfer that data to the volatile memory for further processing. Based on this rationale, the claim 38 get rejected.

As per claim 39, Kwon discloses a wireless communication device, comprising:

- a portable radio telephone (the mobile phone 200 in Fig. 2A), comprising:
 - an addressable volatile memory (first and second RAM 230, 235 in Fig. 2A);
 - a first controller (MPU 220 in Fig. 2A) coupled to the addressable memory;
 - logic (NAND interface circuit ASIC 215, in Fig. 2A) coupled to the first controller;
 - a wireless communication device circuit (RAM2 235 in Fig. 2A) coupled to the first controller; and

- a second controller (microprocessor 220 in Fig. 2A) coupled to the volatile memory and the wireless communication device circuit and configured to control the wireless communication device circuit based upon the data stored in the volatile addressable memory; and
- an accessory, comprising;
 - indirectly-read memory that is not volatile (NAND-type flash memory 210 in Fig. 2A);
 - data stored in the indirectly-read memory; wherein the logic and the first controller are configured to transfer the data from the indirectly-read memory to the addressable volatile memory (e.g. see paragraphs 24-26 on page 2).

As per claim 41, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device, wherein the volatile memory (RAM1 and RAM2 230, 235 in Fig. 2A) is a Random Access Memory (RAM) (e.g. see lines 8-9 of paragraph 25); in addition, neither Applicant's specification nor the claimed invention disclose that different type of volatile memories would yield different function of the system operation. Therefore, any type of volatile memories including the dynamic random access memory (DRAM) and the static random access memory (SRAM), can be used. Kwon also teaches that the wireless communication device uses the NAND-type flash memory. The NAND-type flash memory (which is referred as serial memory in the 'Background of the Invention' section of this application) is one of the non-volatile memory being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-

volatile memories would yield different function of the system operation. Therefore, any type of non-volatile memories including Multimedia Card, Smart Media Card, SD Card, and Memory Stick, can be used in place of the NAND-type flash memory.

As per claim 42, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device comprises a power amplifier (power and reset 260 in the Fig. 2A).

As per claim 43, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communication device comprises a user interface (the user interface 250 in the Fig. 2A).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which formats the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon in view of AAPA (Application Admitted Prior Art) .

Kwon discloses the claimed invention as described above in which the data gets separated and transferred from the flash memory to the RAM by the MPU. (i.e. see Fig. 2A). However, Kwon does not teach that the MPU converts the data from the serial format to the parallel format before transferring it to the RAM. AAPA, on the other hand, discloses that one skilled in the art would recognize that there are numerous ways to

Art Unit: 2186

perform the conversion from serial data to parallel data and vice versa (e.g. see last paragraph of page 12 of this application). Also, it is very well known in the art that the volatile memory (RAM) operates much faster and capable of performing tasks using data in the parallel format.

Accordingly, it would have been obvious to one of having ordinary skills in the art at the time of the current invention was made to implement the wireless communication device taught by Kwon in such a way so it can separate the address and the data read serially from the serial flash memory, convert that data from the serial format to the parallel format as taught by AAPA and then transfer that data to the volatile memory in the parallel format for further processing to increase the performance of the wireless communication device because the CPU can read and write the data and addresses from the volatile memory much faster in parallel format compare to the serial format.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

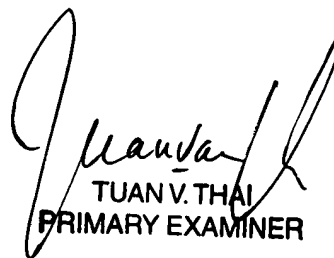
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is (703) 305-6219. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 2186

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

HBP



TUAN V. THAI
PRIMARY EXAMINER